

Notes on certain Asiatic Styracaceae.

BY

WILLIAM WRIGHT SMITH, M.A.

THE species described in the following paper are :—

Parastyrax Lacei, W. W. Sm., p. 232.

Pterostyrax burmanicus, W. W. Sm. et Farrer, p. 233.

Styrax biaristatus, W. W. Sm., p. 233.

Styrax Buchananii, W. W. Sm., p. 234.

Styrax shweliensis, W. W. Sm., p. 236.

The recent acquisition by the Royal Botanic Garden of important collections of Asiatic plants such as the herbaria of Léveillé and of Lace and the material resulting from the further explorations of Forrest, Farrer, and Ward in Yunnan and Upper Burma have elucidated various problems which from the paucity of specimens previously available presented many difficulties to the student of the flora of these regions. Among other orders this is true of the *Styracaceae*, and in addition to the description of three new species the present short paper gives a fuller account of two Burmese plants previously imperfectly known.

Of the three new species described, one, *Pterostyrax burmanicus*, W. W. Sm. et Farrer, is an interesting extension westwards of the genus, and incidentally an example of the important results which will attend an adequate exploration of the alpine regions of Burma. The two previously known Burmese plants for which I have had to form new names are also of interest. *Styrax Buchananii* is I believe equivalent to a plant collected long ago by Griffith, which has remained inadequately described under a varietal name until the collections of Buchanan and Lace came to aid the solution. The other described by the writer in 1911 as *Styrax Lacei* is in the light of the further material secured by Lace not to be retained in that genus, but forms the basis of a new genus *Parastyrax*. The fruit is now available and separates the plant from both *Styrax* and *Pterostyrax*.

Parastyrax, W. W. Sm. Genus novum *Styracacearum*.

Genus a *Styrace*, Linn., ovario infero recedens; *Pterostyraci*, Sieb. et Zucc. valde affinis sed calycis tubo infra ovario adnato
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supra in annulum laxum connato, fructu magno ellipsoideo nec alato nec costato, exocarpio carnosulo distinguitur.

Arbor altissima. Folia alterna subcoriacea minute callosodenticulata. Flores in ramulis hornotinis ex axillis foliorum superiorum orti, in racemos congestos simplices vel parum ramosos dispositi. Calyx infra ovario adnatus supra in annulum cupularem connatus, subinteger. Corollae petala 5, decidua, ima basi paululo cohaerentia, in aestivatione imbricata, erectiuscula. Stamina 10, inclusa, a petalis libera, subaequalia, filamentis in tubum cylindricum connatis; antherae oblongae introrsae. Ovarium pro maxima parte inferum 3-loculare, multiovulatum; stylus elongatus subulatus apice capitatus. Drupa oblongo-ellipsoidea, exocarpio carnosulo praedita, indehiscens, teres vel subteres, abortu 1-2-locularis, 1-2-sperma, maturitate glabra lenticellis magnis notata. Species unica burmanica.

Parastyrax Lacei, W. W. Sm. Comb. nov. *Styrax Lacei*, W. W. Sm. in Kew Bull., 1911, p. 344.

Additional material of this tree is now available which entails certain corrections and additions to the original description. Instead of a tree of moderate height, it is one of 150 feet or over. The inflorescences are axillary to the upper leaves; I have not found one truly terminal. The flowers are noted as yellow. The calyx adnate below to the inferior ovary is prolonged upwards into a narrow ring with a slightly irregular margin but not toothed. The staminal filaments are united into a tube glabrous outside, minutely pilose inside; free part of the filaments very short or almost absent. The mature fruit is wholly inferior, ellipsoid, 3 cm. long by 1 cm. broad, covered with a thin fleshy exocarp, and marked by elongate whitish lenticels; the endocarp is very hard and woody; there are no indications of either wings or ridges on the mature fruit which is said to be edible.

I can now give Lace's full note on No. 5107:—

"Upper Burma:—Kadu Hill, Katha District, alt. 3000-4000 ft. 23rd Feb. 1910. 'Nanem,' Kachin. Large tree, 150 ft. and over in height. Long clean bole and crown composed of pale rather few but strong branches. Calyx truncate. Petals 5 yellow, pubescent on both sides, imbricate in bud; later overlapping and slightly coherent at base. Stamens 10, joined in tube which is rather inflated at base. Stigma terminal. Ovary appears half inferior. Measured one specimen 13 ft. in girth and about 160-170 ft. high. Bark $\frac{3}{4}$ in. thick, reddish inside; no heartwood; wood white. The fruit is said to be large, $1\frac{1}{2}$ in., and is eaten. Common tree in evergreen forest on the Kadu

Hill between 3000 and 4000 ft." Lace No. 5107 in Herb. Kew. Calcutt. et Edin.

"Kadu Hill, 4000 ft., 10th July 1911. Fruiting specimen. Tree 10 ft. in girth at 7 ft. from ground; total height 117 ft. To first branch 67 ft., of which mid-girth was 7 ft. 4 inches. Buttressed at base." Lace No. 5340 in Herb. Edin.

Pterostyrax burmanicus, W. W. Sm. et Farrer. Sp. nov.

Species affinis *P. hispido*, Sieb. et Zucc. a quo foliis anguste lanceolatis, floribus praecocibus multo majoribus differt.

Arbor altissima ex collectore. Ramuli hornotini vix evoluti; seniores cinerascens glabri decorticantes. Folia sub anthesin haud bene evoluta; lamina 5-5.5 cm. longa, 1-1.5 cm. lata, anguste lanceolata, apice acutata, acumine ipso obtusiusculo, basi cuneata, margine minute denticulata, juventute membranacea, pilis stellatis sparsim munita; petiolus fere 1 cm. longus parce stellato-pilosus. Flores praecoces ex axillis foliorum delapsorum orti, in paniculas multifloras (vulgo 15-25-floras) ad 8 cm. longas dispositi vix 2 cm. longi; rhachis dense canescenti-stellato-pilosa; bractae 7-10 mm. longae lineares cum pedicellis 5-8 mm. longis stellato-pilosae. Calycis tubus circ. 3-4 mm. longus, ovario adnatus, nervis quinque dentibus oppositis prominulis pererratus, canescenti-pilosus; dentes 5 circ. 1.5 mm. longi, triangulares acutissimi. Petala circ. 1.8 cm. longa, circ. 1 cm. lata, libera, in aestivatione imbricata, obovata, apice rotundata, alba. Stamina 10, quinque paululo breviora, filamentis in dimidio inferiore in anulum connatis, pilis albis simplicibus bene indutis. Ovarium pro maxima parte inferum 3-4-loculare multiovulatum stylo fere ad apicem stellato-piloso corollam aequante vel paulo superante. Fructus deest.

"East Upper Burma:—Langyang, at 7000 ft.; extremely floriferous and fragrant, dotting the jungle with its white masses, but such a tall and bare-stemmed tree that only gunshot could procure specimens. April 2nd, 1919." R. Farrer. No. 803.

Styrax biaristatus, W. W. Sm. Sp. nov.

Species ex affinitate *S. odoratissimi*, Champ. et *S. Veitchiorum*, Hemsl. a quibus floribus minoribus, calyce fere ad medium in lobos triangulares fisso, staminibus apice biapiculatis filamentis tomentosis, stylo ad apicem pilosulo, fructu resupinato differt.

Frutex 6-9 m. altus. Ramuli subteretes cito glabrescentes, vetustiores cinerei. Folia petiolo 1-1.5 cm. longo sparsissime stellato-piloso praedita; lamina vulgo 9-11 cm. longa, 3-4 cm. lata, oblonga vel elliptico-oblonga, apice acuminata, basi late et saepe asymmetrico cuneata, margine remote et minute denti-

culata, in sicco tenuiter papyracea, supra opaco-viridis glabra, infra vix pallidior, glabra nisi ad axillas nervorum sparsim tomentellas, nervis utrinsecus 7-9-paribus infra paulo eminentibus. Inflorescentiae paniculatae, terminales atque axillares, 6-10 cm. longae, multiflorae; axes dense incano-stellato-tomentosi; bractae lineares mox caducae. Calyx cupuliformis circ. 2 mm. longus, fere ad medium in lobos triangulares subacutos fissus dense adpresso-incano-tomentosus. Corolla flavida 5-partita, tubo fere nullo, lobis in aestivatione imbricatis, 8-9 mm. longis, 2.5 mm. latis, anguste oblongis, subobtusis, utrinque flavescenti-stellato-tomentellis. Stamina 10, filamentis fere liberis 3 mm. longis dense stellato-pilosis, antheris circ. 2 mm. longis, connectivo pilosulo apice producto biaristato. Ovarium ovoideum superum 3-loculare multiovulatum tomentosum; stylus 7-8 mm. longus cylindricus crassus undique pilosulus. Fructus circ. 4 mm. longus ovoideus resupinatus calyce paulo aucto fere omnino inclusus.

"Western China:—In thickets in ravines on the western flank of the Shweli-Salween divide, Yunnan. Lat. 25° 40' N. Alt. 9000 ft. Shrub of 20-30 ft. Flowers fragrant, creamy-yellow. May 1919." G. Forrest. No. 18,020.

"N'Maikha-Salween divide, at Ho-tou, Yunnan, in thickets and open forests. Lat. 25° 55' N. Alt. 7000-8000 ft. Shrub of 12-18 ft. In fruit. Aug. 1919." G. Forrest. No. 18,400. (Also No. 18,833, Nov. 1919.)

The following Henryan sheets in fruit are referable in my opinion to the same species:—

"Mengtze, S.E. mountain forests. 6000 ft. Tree of 15 ft." A. Henry. No. 10,764.

"South of Red River, Yunnan. Tree of 40 ft." A. Henry. No. 13,662.

"Mengtze, Yunnan. Shrub of 10 ft." A. Henry. No. 13,662A.

***Styrax Buchananii*, W. W. Sm. Sp. nov.**

? *S. serrulatus*, Roxb., var. *latifolius*, Perk. in Engl. Pflanz., *Styracaceae* (1907), 37.

Species affinis *S. serrulato*, Roxb. a quo foliis multo latoribus, calyce densissime piloso, antheris parte libera filamentorum duplo longioribus inter alia discriminatur.

Arbor parva; rami subteretes, juniores densissime incano-vel fulvo-stellato-tomentosi, seniores glabrescentes. Folia petiolo 3-4 mm. longo tomentoso munita; lamina 6-16 cm. longa, 4-11 cm. lata, vulgo late oblonga, apice ambitu subrotundata nunc breviter acuminata nunc obtusissima, basi rotundata, margine minute et irregulariter denticulata, papyracea, supra

ad costam nervosque densiuscule fulvo-stellato-pilosa ceterum sparsissime, infra paulo densius quam supra induta, nervis 5-6-jugis utrinque in sicco conspicuis. Inflorescentiae axillares et terminales, racemosae, 3-10 cm. longae, 3-20-florae; rhachis dense et molliter incano-tomentosa; bractae circ. 3 mm. longae, lineares; pedicelli circ. 5 mm. longi incano-tomentosi; flores albi circ. 1.5 cm. longi. Calyx late cupuliformis, circ. 5 mm. longus, ore 5 mm. latus, densissime fulvo-tomentosus, margine truncatus dentibus 5 minutis. Corolla 5-partita, tubo 3 mm. longo, lobis in aestivatione valvatis circ. 13 mm. longis ad 4 mm. latis lanceolatis vel ovato-lanceolatis acutiusculis extra minute tomentosus. Stamina 10, filamentis parte libera 3 mm. longis undique longiuscule stellato-pilosis, antheris 6 mm. longis pilis stellatis conspersis. Ovarium longe albo-pilosum stylo ad duas partes inferiores piloso supra glabro. Fructus deest.

"Upper Burma:—Myitkyina in Mara Nantan forest, Kawkwe Valley. Alt. 2000 ft. March 1912. Small tree. Flowers sweet-scented." E. M. Buchanan. No. 51. Type.

"Myitkyina at Lamaing. Alt. 2500 ft. March 1909." E. M. Buchanan. No. 21.

"Bhamo District, road to Sinlumkaba. Alt. 4000 ft. 5th April 1919. Small tree." Lace. No. 5737.

This species is in all probability identical with Griffith's No. 3670 in Herb. Kew., collected in the Ruby Mines District of Burma. To this imperfect specimen Miss Perkins gave the varietal name of *latifolius* and attached it to *S. serrulatus*, Roxb. with the note:—"Verisimiliter species nova; materia vero nimis incompleta de hac re disceptare non possumus." There is a *S. latifolius*, Pohl from Brazil.

Styrax grandiflorus, Griff.

S. touchanensis, Lévl.

"Tou-chan, Yunnan. April 1902." E. Bodinier.

"Flanks of the Mingkwong Valley, Yunnan, in thickets. Lat. 25° 15' N. Alt. 7000 feet. Tree of 30-40 ft. In fruit. June 1912." G. Forrest. No. 8042.

"Shweli Valley, Yunnan, in open situations. Lat. 25° 30' N. Alt. 6000 ft. Shrub of 10 ft. Flowers creamy-white, fragrant. Anther orange. May 1913." G. Forrest. No. 11,945.

"Shweli-Salween divide, Yunnan, in open situations on the margins of mixed thickets. Lat. 25° N. Alt. 7000 ft. Shrub of 20 ft. Flowers creamy-white. June 1919." G. Forrest. No. 17,899.

The same in fruit. Sept. 1919. No. 18,455.

Not previously recorded from China.

***Styrax shweliensis*, W. W. Sm. Sp. nov.**

Species affinis *S. hypoglauc*o, Perk. a quo foliis minoribus breviter acuminatis crebre et minute denticulatis supra pilosulis infra cinereo-tomentosis, inflorescentiis paucifloris, calycis tubo multo majore ferrugineo-tomentoso dentibus minutis irregularibus differt; haud procul a *S. Perkinsiae*, Rehder a quo foliis crebre serratulis, pedicellis calycibusque ferrugineis primo intuitu distinguitur; a *S. langkongensi*, W. W. Sm. foliis ovalibus vel ellipticis infra tenuiter cinereo-tomentosis inter alia recedit.

Frutex 2-3 m. altus; rami subteretes, hornotini dense cinereo-vel subferrugineo-tomentosi, annotini glabrescentes et decorticantes. Folia petiolo 4-5 mm. longo dense stellato-tomentosa praedita; lamina vulgo 5-6 cm. longa, 3-3.5 cm. lata, ovalis vel late elliptica, apice breviter acuminata, basi rotundata vel subrotundata, margine crebre et minute denticulata, papyracea, supra pilis furcatis praesertim ad costam bene conspersa, infra indumento tenui stellato cinereo induta nervis lateralibus 4-5. Inflorescentiae pauciflorae, 1-3-florae, axillares et terminales; flores circ. 2 cm. longi, albi, pedicello 7-9 mm. longo dense ferrugineo-tomentoso muniti. Calyx cupuliformis circ. 5 mm. longus, nunc ore truncatus dentibus minutis, nunc irregulariter dentatus, dense ferrugineo-stellato-tomentosus. Corolla 5-partita, tubo 3 mm. longo, lobis in aestivatione imbricatis, 13 mm. longis, 5-6 mm. latis ovato-lanceolatis vel subobovatis, obtusiusculis, extra molliter flavescenti-stellato-tomentosis. Stamina 10, filamentis parte libera complanatis circ. 6 mm. longis albob pilosis; antherae circ. 4 mm. longae pilis stellatis parce munitae. Ovarium dense albido-tomentosum stylo circ. 13 mm. longo fere ad apicem pilosulo. Fructus ovoideus, 12-18 mm. longus, ad 1 cm. latus, breviter mucronatus, calyce persistente inclusus, tomentosus.

"West China:—Tengyueh-Shweli divide, Yunnan, in open situations amongst scrub. Lat. 25° N. Alt. 7000 ft. Shrub of 6-9 ft. Flowers dull creamy-white. May 1913." G. Forrest. No. 9869.

"Mekong-Salween divide, Yunnan, in open thickets. Lat. 26° 10' N. Alt. 8000-9000 ft. Shrub of 10-12 ft. In fruit, July 1919." G. Forrest. No. 18,249.